

## ABSTRACT

This invention achieves high-quality separation of mixed signals in situations where the relationship between the number of signal sources  $N$  and the number of sensors  $M$  is such that  $N > M$ .

5           First, the values of the observed signal observed by  $M$  sensors are transformed into frequency domain values, and these frequency domain values are used to calculate the relative values of the observed values between the sensors at each frequency. These relative values are clustered into  $N$  clusters, and the representative value of each cluster is calculated. Then, using  
10 these representative values, a mask is produced to extract the values of the signals emitted by  $V$  ( $1 \leq V \leq M$ ) signal sources from the frequency-domain signal values, and this mask is used to extract the signal values emitted by  $V$  signal sources from these frequency-domain signal values. After that, if  $V=1$  then the limited signal is output directly as a separated signal, while if  $V \geq 2$   
15 then the separated values are obtained from this limited signal by subjecting it to separation techniques such as ICA.